HARTCROWSER

Earth and Environmental Technologies

Hart Crowser, Inc.
1910 Fairview Avenue East
Seattle, Washington 98102-3699
FAX 206.328.5581
206.324.9530

J-2296-01

October 27, 1989

Potlatch Corporation
P. O. Box 386
St. Maries, Idaho 83861

Attn: Mr. Mike Fish

Re: Site Exploration Report
Avery Landing Site
Avery, Idaho

Dear Mr. Fish:

Hart Crowser, Inc., is pleased to submit this letter report for work completed to date at the Avery Landing site in Avery, Idaho. Our work was completed as outlined in Task 1 of our revised scope of work letter dated June 30, 1989. Additional water and product sampling was completed as discussed in our memorandum to Mr. Mike Fish of Potlatch Corporation dated September 15, 1989.

The scope of Task 1 work involved monitoring well installation, groundwater and free-phase hydrocarbon sampling, and laboratory analysis. Field sampling of

free-phase hydrocarbons was not completed during our August site visit due to absence of free product in the newly installed wells at that time. Product sampling was completed during our September visit.

The purpose of our field work to date has been to determine the extent of the free-phase hydrocarbon lens and potential groundwater contamination. Water and free product samples were analyzed to determine the level of dissolved hydrocarbons in the groundwater and the suitability of the hydrocarbon material for burning as boiler fuel.

The following report will cover:

- Monitoring well installation;
- Groundwater and free-phase hydrocarbon sampling;
- Laboratory analysis results; and
- Conclusion and recommendations.

Appendix A contains a discussion of field procedures and well installation logs. Laboratory analysis certificates are presented in Appendix B.

Installation of Monitoring Wells

Four monitoring wells were installed at the Avery Landing site on August 22 and 23, 1989. The Hart Crowser on-site representative was Bruce McDonald, Senior Staff Engineering Geologist. The subcontracted drillers were Soil Sampling Service of Puyallup, Washington. All drilling was completed with air rotary drilling methods. Monitoring well locations are shown on Figure 1. Well construction data are presented on Figures A-2 through A-5. A key displaying the symbols used to describe well installation logs is presented on Figure A-1.

Groundwater and Free-Phase Hydrocarbon Sampling

Groundwater samples were collected on August 23, 1989, from each of the four monitoring wells installed by Hart Crowser. Monitoring wells HC-1 and HC-3 had no noticeable sheen on purged water. Heavy sheens were observed on purged water from monitoring wells HC-2 and HC-4, a strong odor was noted from HC-4. Free-phase hydrocarbons were not present in any of the new wells at that time. Water samples from HC-1 and HC-3 were submitted to Analytical Resources Incorporated of Seattle, Washington, under contract with Hart Crowser, for analysis of total petroleum hydrocarbons (TPH) and dissolved metals (arsenic, cadmium, chromium, and lead).

A representative from Hart Crowser returned to the Avery Landing site on September 26, 1989. Free-phase hydrocarbons thickness was measured at approximately 4 feet in monitoring well HC-4. Free-phase hydrocarbons were not detected in HC-2 or HC-3. According to trailer park residents living adjacent to the site, monitoring well HC-1 had been removed to repair water and sewer lines.

Groundwater samples were collected from HC-2 and HC-3, purge water from both wells had a slight odor and a light sheen. Samples were analyzed for fuel hydrocarbons using the free-product from HC-4 as a standard. Free-phase hydrocarbons were collected from HC-4 and analyzed for total extraction procedure toxicity (EP Tox) metals, polychlorinated biphenyls (PCBs), polynuclear aromatic hydrocarbons (PNAs), total halogenated hydrocarbons (TOX), total metals and flashpoint.

All samples were submitted to Analytical Resources Incorporated (ARI) for analysis, some analyses were subcontracted by ARI to Spectrum Laboratories, Inc., of Seattle. Sampling procedures may be found in Appendix A.

Laboratory Analysis Results

Groundwater

Water samples collected from HC-1 and HC-3 on August 23, 1989, were analyzed for TPH (EPA Method 418.1) and dissolved

metals. TPH was nondetectable in HC-1 and HC-3, all metals were also nondetectable except arsenic in HC-3 at 0.009 parts per million (ppm).

Water samples collected September 26, 1989, from HC-2 and HC-3, were analyzed for fuel hydrocarbons by Gas Chromatograph (EPA Method 8015) using the free-phase hydrocarbons from HC-4 as a standard. Fuel hydrocarbons were nondetectable in both samples.

Table 1 summarizes the groundwater analysis results. Laboratory data sheets may be found in Appendix B.

Free-phase Hydrocarbons

Analysis of free-phase hydrocarbons in HC-4 resulted in nondetectable concentrations of all PNA compounds, PCBs, and total halogenated hydrocarbons. All EP Tox metals were also nondetectable except for barium at 0.005 ppm. The flash point of the free-phase hydrocarbons is reported as greater than 210 degrees Fahrenheit. The sample was also analyzed for total metals: cadmium (not detected), chromium (1 ppm), lead (5 ppm), and arsenic (not detected).

CONCLUSIONS AND RECOMMENDATIONS

The analytical results indicate the following:

- The groundwater in well HC-1 at the west property line does not appear to be impacted by the petroleum hydrocarbons;
- The majority of the free-phase petroleum appears to lie beneath the eastern part of the site;
- The free-phase petroleum is not a characteristic hazardous waste as determined by the EP Toxicity test as defined under federal law;
- The free-phase petroleum appears suitable for use by burning for fuel in energy recovery boilers;
- Our prior concept for an interception recovery trench to prevent migration of the petroleum to the St. Joe River still appears appropriate and practical.

Our work has been performed in accordance with generally accepted professional practices in the same or similar localities, related to the nature of the work accomplished at the time the services were performed. It is intended for the exclusive use of Potlatch Corporation, for specific

application to the project site. No other conditions, express or implied, should be understood.

Any questions regarding this report are welcome and should be referred to Alex Tula, Project Manager.

Sincerely,

HART CROWSER, INC.

Jeri L. Massengill

JERI L. MASSENGILL
Staff Geologist

ALEX TULA
Associate

JLM/AT:cmr/sde
LR22961A/JOBS

Attachments:
Table 1 - Groundwater Analysis Summary
Figure 1 - Site and Exploration Plan
Appendix A - Field Procedures
Figure A-1 - Key to Exploration Logs
Figure A-2 through A-5 - Well Construction Data for Monitoring Well HC-1 through HC-4
Appendix B - Laboratory Data Sheets
Analytical Resources Incorporated and Spectra Laboratories, Inc.

Table 1 - Groundwater Analysis Summary

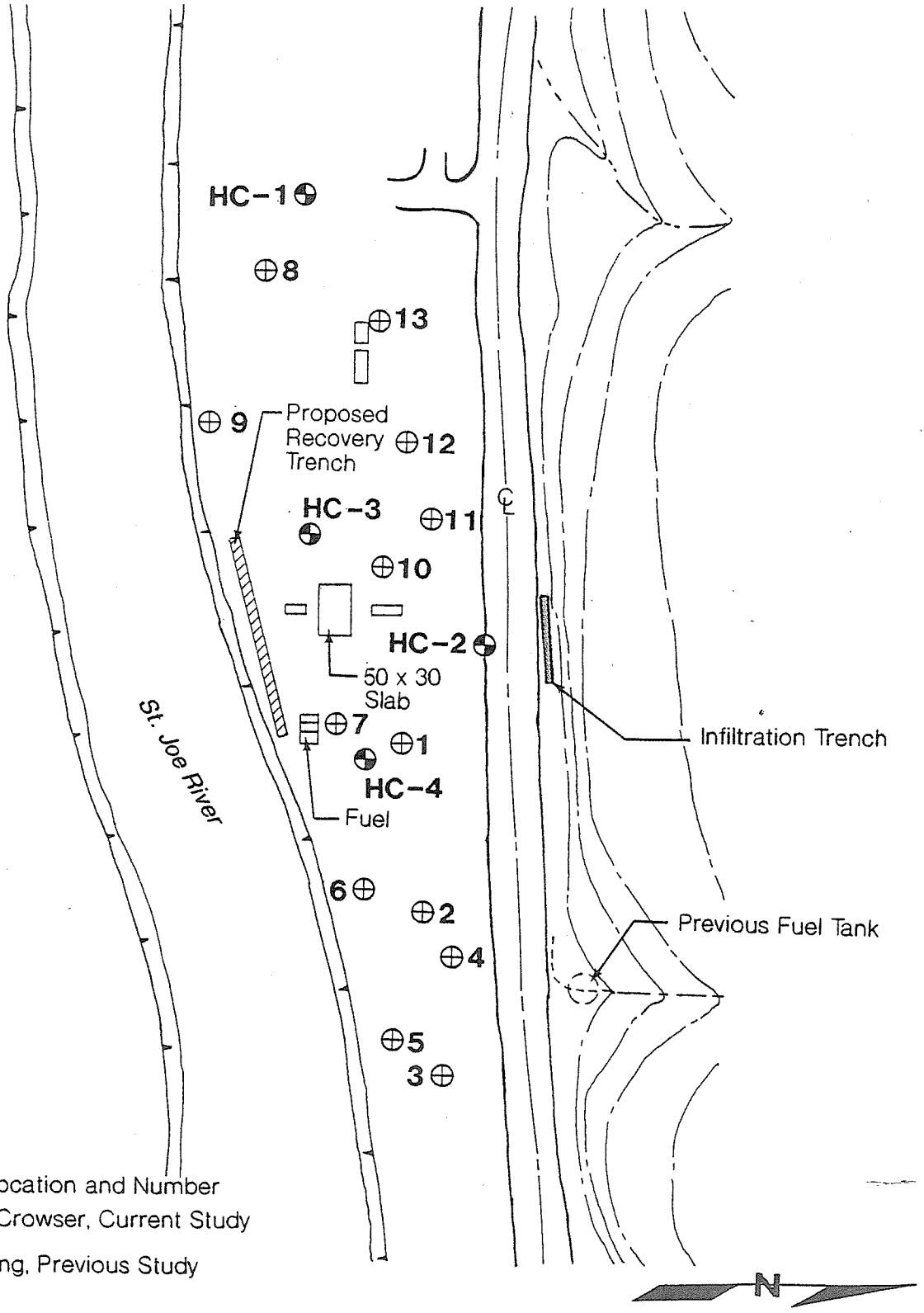
Well	Date Sampled	Analysis Performed		
		TPH	Dissolved Metals	
		(EPA Method 418.1)		
HC-1	August 23, 1989	< 10.0	< 0.001	Arsenic
			< 0.002	Cadmium
			< 0.005	Chromium
			< 0.001	Lead
HC-3	August 23, 1989	< 10.0	0.009	Arsenic
			< 0.002	Cadmium
			< 0.005	Chromium
			< 0.001	Lead
		TPH (EPA Method 8015)		
HC-2	September 26, 1989	< 50.0 *		
HC-3	September 26, 1989	< 50.0 *		

Results reported in parts per million (ppm)

* Analyses performed using free-phase hydrocarbons collected in HC-4 as a standard.

< Not detected at analytical detection limit indicated.

Site and Exploration Plan



mw

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Figure 1

APPENDIX A
FIELD PROCEDURES

APPENDIX A
FIELD PROCEDURES

INTRODUCTION

Field work was completed between August 22, 1989 and September 26, 1989, by Hart Crowser, Inc., and their subcontractor. Hart Crowser's field representatives for this project were Bruce McDonald, Senior Staff Engineering Geologist and Jeri Massengill, Staff Geologist.

Soil Sampling Services, Inc., of Puyallup, Washington, under subcontract to Hart Crowser, completed the drilling and well installation activities on all wells. Groundwater samples were submitted to Analytical Resources, Inc., of Seattle, Washington, for chemical testing.

The program of well installation included the completion of four borings, all of which were completed with air rotary drilling methods using compressed air to lift cuttings from the boring.

The monitoring well locations are presented on Figure 1. Locations were established by hand taping or pacing from existing physical features.

Air Rotary Borings

All borings were completed using percussion bit rotary drilling and air lifted cuttings. Borings were drilled between August 22 and 23, 1989, and completed within a range of depths from 18.5 feet to 23.4 feet below the ground surface. Borings were advanced with a truck-mounted drilling rig using an air-driven percussion bit inside a six-inch inside diameter driven casing. Drilling was accomplished under the continuous observation of a Hart Crowser field representative.

Well Installations

All wells are of 2-inch inside diameter Schedule 40 PVC single well construction and have 10-foot screened sections with 0.020-inch slot size. Wells were installed by lowering the casing to the desired depth. Aqua 8 sand was used to backfill the annulus around the screen to a level 2 feet above the top of the screen. Bentonite chips were used to backfill and grout

the borehole to a depth of 1 foot below the surface. All wells have a concrete surface seal and are protected by either a flush or stickup locking steel monument. Well construction information is presented on Figures A-2 through A-5.

Water Level Measurements

Water level measurements were made for each boring at the time water was first observed during drilling, and immediately prior to placement of the well screen. Subsequent sets of water level measurements were made of all wells installed. These were made before well development and sampling.

Water levels were measured to an accuracy of 0.01 foot using an Olympic Model 300 Electric Well Probe and a decimally graduated tape measure. The tip of the well probe was routinely rinsed with deionized water between wells in order to prevent chemical cross contamination.

Well Development

Development of wells was accomplished by hand bailing. Wells were developed by purging at least four casing volumes of water to remove the fine-grained silt and sand and suspended clay from the well bottom. The wells retained a slight degree of turbidity after development with the exception of HC-3 which remained very turbid.

Groundwater and Free-Phase Hydrocarbon Sampling for Chemical Analysis

Groundwater samples were obtained from the 4 monitoring wells on August 23, 1989. Free-phase hydrocarbon from HC-4 and groundwater samples from HC-2 and HC-3 were collected on September 26, 1989.

Groundwater samples from monitoring wells were obtained using a stainless steel or teflon bailer. To obtain representative groundwater samples, at least 3 casing volumes of water were purged prior to actual sampling. Water was then poured from the bailer into appropriate laboratory provided bottles.

Free-phase hydrocarbons were detected in monitoring well HC-4 during our September 26, 1989, visit. HC-4 was not purged prior to sampling; in this case, the free-phase hydrocarbons were poured from a plastic disposable bailer into a laboratory provided bottle.

All samples were labeled and placed on an ice insulated cooler. Sample custody was documented at all times.

Decontamination Procedures

Drilling, sampling, and testing equipment were routinely decontaminated in the field. Decontamination of drilling equipment between explorations consisted of steam cleaning followed by a tap water rinse. PVC components (screen, riser, and end caps) used in well construction were also steam cleaned and rinsed in tap water prior to installation.

The well probe and sampling bailers were decontaminated with a wash of distilled water and detergent followed by two distilled water rinses.

Chain of Custody

All sample jars were prelabeled with well number, job number, date, and the samplers initials. Chain of custody forms were filled out, signed, and countersigned for transfers of samples from the possession of Hart Crowser field representatives to personnel at Analytical Resources, Inc. Chain of custody documents are maintained in the QA/QC records of Hart Crowser.

Key to Exploration Logs

Sample Descriptions

Classification of soils in this report is based on visual field and laboratory observations which include density/consistency, moisture condition, grain size, and plasticity estimates and should not be construed to imply field nor laboratory testing unless presented herein. Visual-manual classification methods of ASTM D 2488 were used as an identification guide.

Soil descriptions consist of the following:
Density/consistency, moisture, color, minor constituents, MAJOR CONSTITUENT, additional remarks.

Density/Consistency

Soil density/consistency in borings is related primarily to the Standard Penetration Resistance. Soil density/consistency in test pits is estimated based on visual observation and is presented parenthetically on the test pit logs.

SAND or GRAVEL Density	Standard Penetration Resistance in Blows/Foot	SILT or CLAY Consistency	Standard Penetration Resistance in Blows/Foot	Approximate Shear Strength in TSF
Very loose	0 - 4	Very soft	0 - 2	<0.125
Loose	4 - 10	Soft	2 - 4	0.125 - 0.25
Medium dense	10 - 30	Medium stiff	4 - 8	0.25 - 0.5
Dense	30 - 50	Stiff	8 - 15	0.5 - 1.0
Very dense	>50	Very stiff	15 - 30	1.0 - 2.0
		Hard	>30	>2.0

Moisture

Dry	Little perceptible moisture
Damp	Some perceptible moisture, probably below optimum
Moist	Probably near optimum moisture content
Wet	Much perceptible moisture, probably above optimum

Minor Constituents

	Estimated Percentage
Not identified in description	0 - 5
Slightly (clayey, silty, etc.)	5 - 12
Clayey, silty, sandy, gravelly	12 - 30
Very (clayey, silty, etc.)	30 - 50

Legends

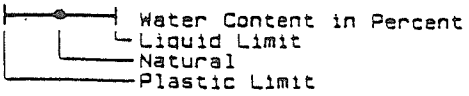
Sampling

BORING SAMPLES

☒	Split Spoon
▨	Shelby Tube
▥	Cuttings
▣	Core Run
*	No Sample Recovery
P	Tube Pushed, Not Driven

Test Symbols

GS	Grain Size Classification
CN	Consolidation
TUU	Triaxial Unconsolidated Undrained
TCU	Triaxial Consolidated Undrained
TCD	Triaxial Consolidated Drained
QU	Unconfined Compression
DS	Direct Shear
K	Permeability
PP	Pocket Penetrometer Approximate Compressive Strength in TSF
TV	Torvane Approximate Shear Strength in TSF
CBR	California Bearing Ratio
MD	Moisture Density Relationship
AL	Atterberg Limits



Ground Water Observations

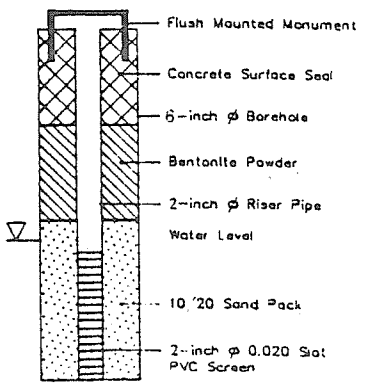


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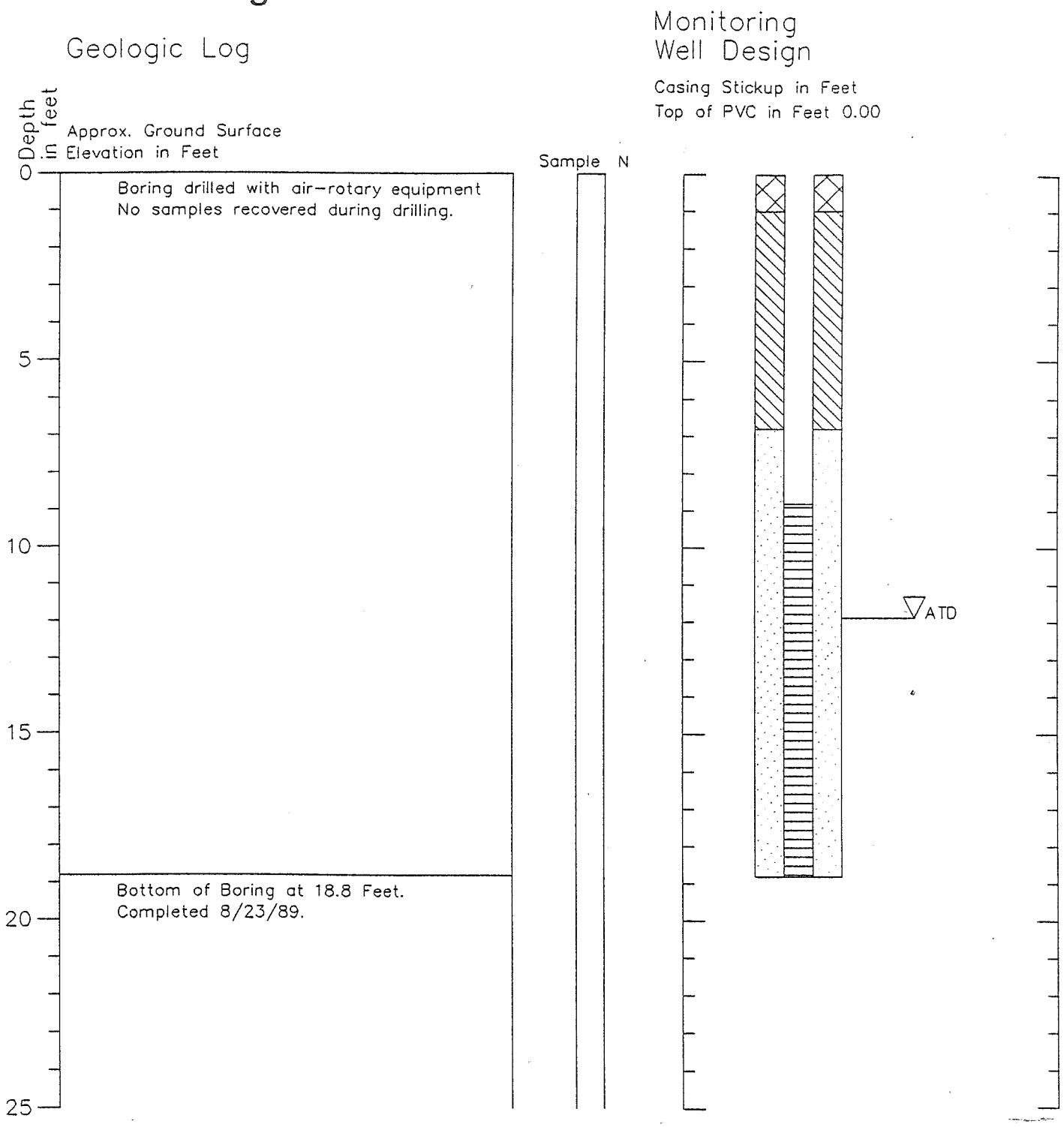
Figure A-1

Boring Log and Construction Data for Monitoring Well HC-1



1. Refer to Figure A-1 for explanation of descriptions and symbols.
2. Soil descriptions and stratum lines are interpretive and actual changes may be gradual.
3. Ground water level, if indicated, is at time of drilling (ATD) or for date specified. Level may vary with time.

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Figure A-2

Boring Log and Construction Data for Monitoring Well HC-2

Geologic Log

Depth in feet

Approx. Ground Surface Elevation in Feet

0

Boring drilled with air-rotary equipment.
No samples recovered during drilling.

5

10

15

20

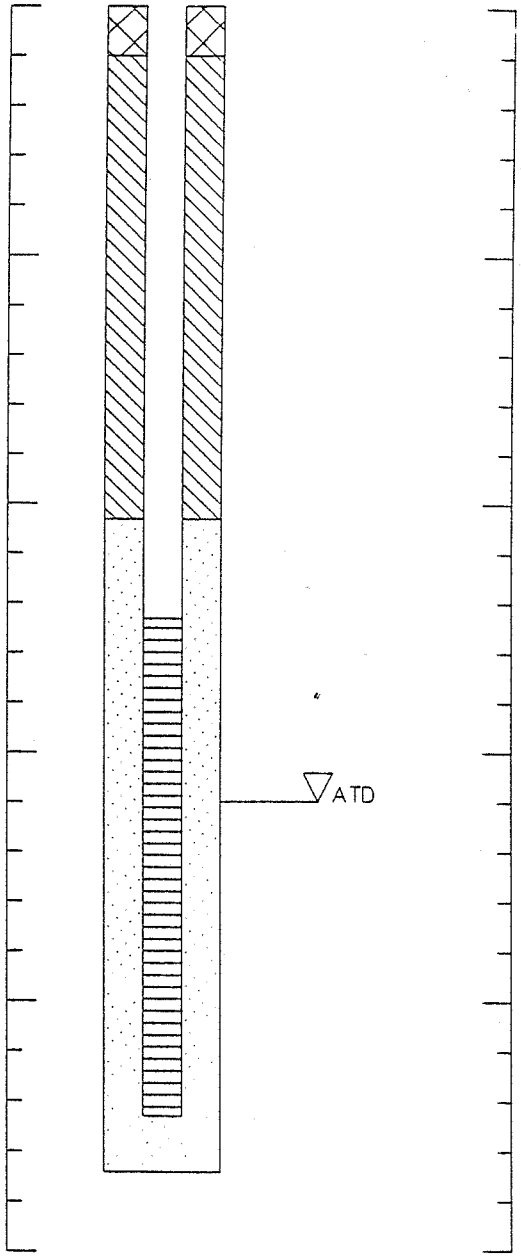
Bottom of Boring at 23.4 Feet.
Completed 8/23/89.

25

Sample N

Monitoring Well Design

Casing Stickup in Feet
Top of PVC in Feet 0.00



1. Refer to Figure A-1 for explanation of descriptions and symbols.
2. Soil descriptions and stratum lines are interpretive and actual changes may be gradual.
3. Ground water level, if indicated, is at time of drilling (ATD) or for date specified. Level may vary with time.

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Figure A-3

Boring Log and Construction Data for Monitoring Well HC-3

Geologic Log

Depth in feet

Approx. Ground Surface Elevation in Feet

0

Boring drilled with air-rotary equipment.
No samples recovered during drilling.

5

10

15

Bottom of Boring at 18.6 Feet.
Completed 8/23/89.

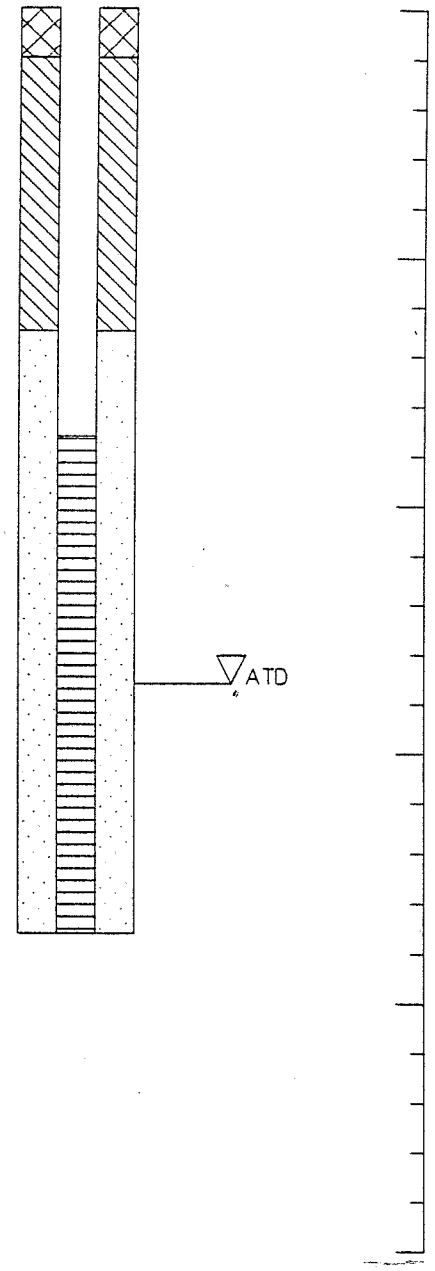
20

25

Monitoring Well Design

Casing Stickup in Feet
Top of PVC in Feet 0.00

Sample N



1. Refer to Figure A-1 for explanation of descriptions and symbols.
2. Soil descriptions and stratum lines are interpretive and actual changes may be gradual.
3. Ground water level, if indicated, is at time of drilling (ATD) or for date specified. Level may vary with time.

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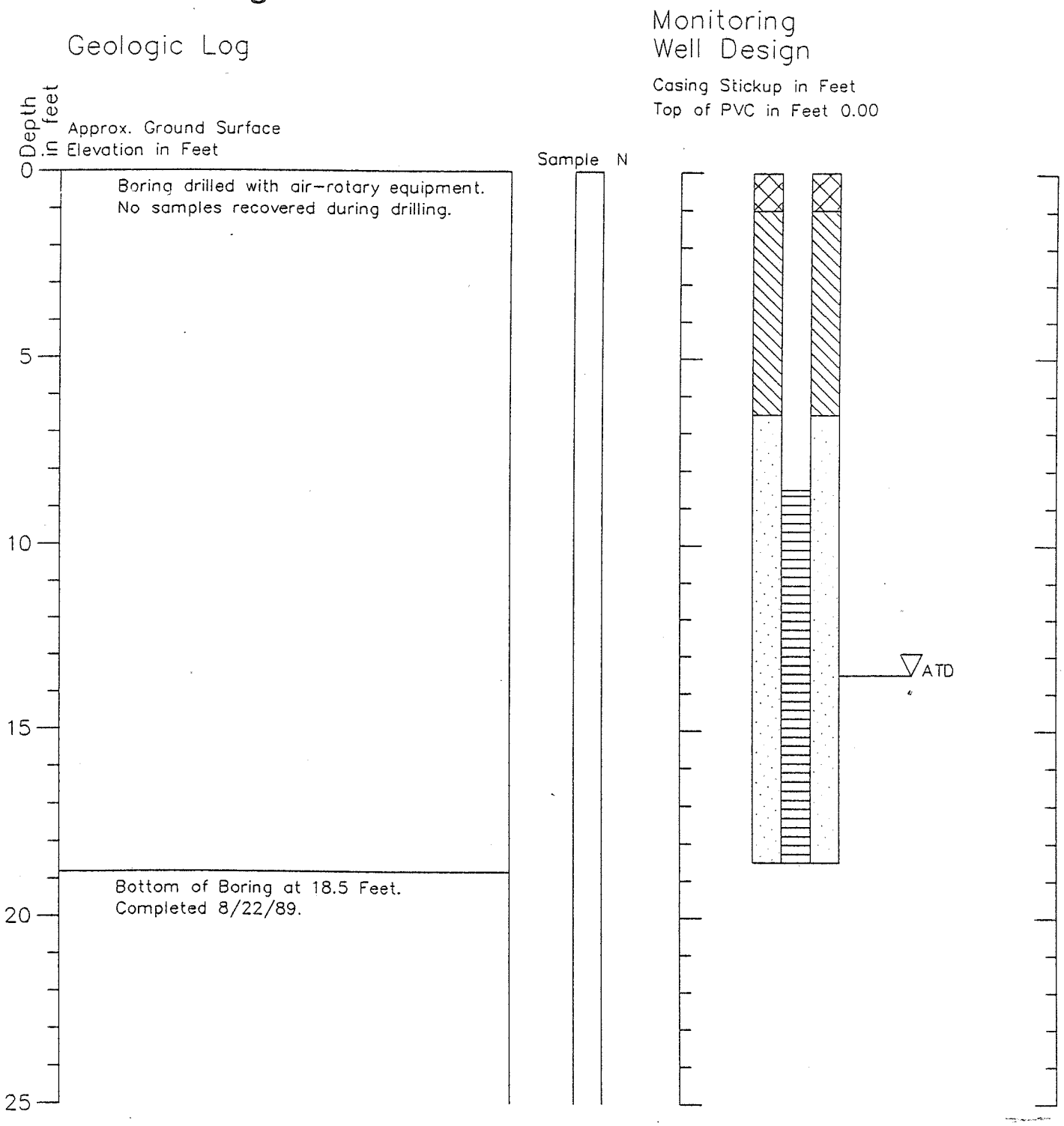
Figure A-4

Boring Log and Construction Data for Monitoring Well HC-4



1. Refer to Figure A-1 for explanation of descriptions and symbols.
2. Soil descriptions and stratum lines are interpretive and actual changes may be gradual.
3. Ground water level, if indicated, is at time of drilling (ATD) or for date specified. Level may vary with time.

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Figure A-5

Hart Crowser
J-2296-01

APPENDIX B
LABORATORY DATA SHEETS
ANALYTICAL RESOURCES INCORPORATED
AND SPECTRA LABORATORIES, INC.

ANALYTICAL
RESOURCES
INCORPORATED

Analytical
Chemists &
Consultants

333 Ninth Ave. North
Seattle, WA 98109-5187
(206) 621-6490
(206) 621-7523 (FAX)

TOTAL PETROLEUM HYDROCARBONS by IR Scan
Modified EPA Method 418.1

Matrix: Water

Project: Potlatch Corp. #J-2296-01

QC Report No: 3540-Hart Crowser

VTSR: 08/28/89

Data Release Authorized _____

Data Prepared: 08/29/89 - MAC:C C.G.

Date of Analysis: 08/29/89
Date Prepared: 08/29/89

	Lab ID	Client Sample ID	Dilution Factor	TPH (ppm)
1	*3540 MB*	*Method Blank*	*1*	10 U
2	3540 A	HC-1	1	10 U
3	3540 B	HC-3	1	10 U

Values reported in ppm (mg/Kg) based on wet weight of sample

U Indicates compound was analyzed for but not detected at the given detection limit.

ANALYTICAL RESOURCES, INC.
Inorganic Laboratory Data Report
09/05/89
10:58:34

Client: HART CROWSER
Contact: SCOTT FERRIS
Project: POTLATCH CORP
ID number: HC-1
Description:
Sampled: / /
Matrix: WATER

ARI job number: 3540
ARI sample number: A

Released by: NRW

A N A L Y T I C A L R E S U L T S

CAS Number	Analyte	Concentration	C	Prep	M
7440-38-2	Arsenic	0.001 mg/L	L	DMN	GFA
7440-43-9	Cadmium	0.002 mg/L	L	DMN	ICP
7440-47-3	Chromium	0.005 mg/L	L	DMN	ICP
7439-92-1	Lead	0.001 mg/L	L	DMN	GFA

ANALYTICAL RESOURCES, INC.
Inorganic Laboratory Data Report
09/05/89
10:58:41

Client: HART CROWSER
Contact: SCOTT FERRIS
Project: POTLATCH CORP
ID number: HC-3
Description:
Sampled: / /
Matrix: WATER

ARI job number: 3540
ARI sample number: B

Released by: NRW

A N A L Y T I C A L R E S U L T S

CAS Number	Analyte	Concentration	C	Prep	M
7440-38-2	Arsenic	0.009 mg/L		DMN	GFA
7440-43-9	Cadmium	0.002 mg/L	L	DMN	ICP
7440-47-3	Chromium	0.005 mg/L	L	DMN	ICP
7439-92-1	Lead	0.001 mg/L	L	DMN	GFA

ANALYTICAL
RESOURCES
INCORPORATED

Analytical
Chemists &
Consultants

333 Ninth Ave. North
Seattle, Wa 98109-5187
(206) 621-6490

DATA REPORT SHEET
Product Analysis

CLIENT:Hart Crowser
ARI JOB #: 284503747
VTSR: 09/28/89
PROJECT: 2296-02
Avery Landing

ARI SAMPLE #	CLIENT SAMPLE #	Product (ppm)
3747 A	MW-2/S-1	50 UJ
3747 B	MW3/S-1	50 UJ
3747 MB	Method Blank	50 UJ

DATA QUALIFIER

U Indicates compound analyzed for but not detected at the given detection limit.

J Indicates value is estimated, based on results of client-supplied product which was used for a standard.

Date Release Authorized: _____

Report prepared 10/27/89 - MAC:B

SPECTRA Laboratories, Inc.
5013 Pacific Hwy. E. #12 • Tacoma, WA 98424 • (206) 922-5120

October 5, 1989

Analytical Resources Inc.
333 Ninth Ave North
Seattle, WA 98109-5187
Customer #81570

Attn: Catherine Greer

Sample ID: MW 4/S-1
ARI #3747-C
Spectra #26941

Total halogens, ppm	<1
Flash Point, PMCC °F	>210

EP Toxicity Metals, mg/l

Lead	(Pb)	<0.01
Chromium	(Cr)	<0.002
Silver	(Ag)	<0.004
Barium	(Ba)	0.005
Cadmium	(Cd)	<0.005
Arsenic	(As)	<0.08
Mercury	(Hg)	<0.02
Selenium	(Se)	<0.1

SPECTRA LABORATORIES, INC.

Steven G. Hibbs, Chemist

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Consultants

333 Ninth Ave. North
Seattle, WA 98109-5187
(206) 621-6490
(206) 621-7523 (FAX)

ORGANICS ANALYSIS DATA SHEET
PCB Analysis

QC Report: 3747-Hart Crowser
Project No: 2296-02/Avery Landing
Date Received: 09/28/89

Matrix: Oil

Data Release Authorized
Report prepared: 10/04/89 - MAC:C

Sulfur Cleaned: NO
Alumina Cleaned: NO
GPC Cleaned: NO

Reported in ppm (mg/Kg)

Sample #:	Method Blk.	MW-4/S-1
ARI Lab ID:	*3747MB*	*3747C*
Date Extracted:	*10/03/89*	*10/03/89*
Date Analyzed:	*10/03/89*	*10/03/89*
Sample Weight:	*5.0 g*	*5.04 g*
Dilution:	*1:40*	*1:40*
1016/1242	1.0 U	2.0 U
1248	1.0 U	2.0 U
1254	1.0 U	2.0 U
1260	1.0 U	2.0 U
DBC %Rec	*55%*	*78%*

Data Reporting Qualifiers

U Indicates compound was analyzed for but not detected at the given detection limit.

NR Indicates compound not reported due to chromatographic interference and/or dilution.

ANALYTICAL
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Chemists &
Consultants

333 Ninth Ave. North
Seattle, WA 98109-5187
(206) 621-6490
(206) 621-7523 (FAX)

ORGANICS ANALYSIS DATA SHEET- PNA by GC-FID

Lab Sample ID: 3747 C
Matrix: Product

Sample No: MW-4/S-1
QC Report No: 3747-Hart Crowser
VTSR: 09/28/89

Date Extracted: 10/03/89
Date Analyzed: 10/05/89
Conc/Dil Factor: 1:100
Dry Weight: 1.24 grams

Data Release Authorized: _____
REPORT PREPARED: MAC:C - C.G.. (10/05/89)

Reported in ppm(mg/kg)

CAS Number		mg/kg
91-20-3	Naphthalene	1000 U
208-96-8	Acenaphthylene	1300 U
83-32-9	Acenaphthene	1400 U
86-73-7	Fluorene	1300 U
85-01-8	Phenanthrene	1200 U
120-12-7	Anthracene	1000 U
206-44-0	Fluoranthene	200 U
129-00-0	Pyrene	200 U
56-55-3	Benzo(a)Anthracene	200 U
218-01-9	Chrysene	200 U
205-99-2 207-08-9	Benzo(b)Fluoranthene & Benzo(k)Fluoranthene	300 U
50-32-8	Benzo(a)Pyrene	300 U
193-39-5	Indeno(1,2,3-cd)Pyrene	500 U
53-70-3	Dibenz(a,h)Anthracene	500 U
191-24-2	Benzo(ghi)Perylene	600 U

SURROGATE PERCENT RECOVERY

Terphenyl	103%

Data Qualifiers

U — Indicates compound was analyzed for but not detected at the given detection limit.

NA — Indicates compound not analyzed.

NR — Indicates compound not reported due to dilution and/or matrix interference.

ANALYTICAL
RESOURCES
INCORPORATED

Analytical
Chemists &
Consultants

333 Ninth Ave. North
Seattle, WA 98109-5187
(206) 621-6490
(206) 621-7523 (FAX)

ORGANICS ANALYSIS DATA SHEET- PNA by GC-FID

Lab Sample ID: 1003MB
Matrix: Product

Sample No: Method Blank
QC Report No: 3747-Hart Crowser
VTSR: 09/28/89

Date Extracted: 10/03/89
Date Analyzed: 10/05/89
Conc/Dil Factor: 1:10
Dry Weight: 4.0 grams

Data Release Authorized: _____
REPORT PREPARED: MAC:C - C.G.. (10/05/89)

Reported in ppm(mg/kg)

CAS Number		mg/kg
91-20-3	Naphthalene	2.0 U
208-96-8	Acenaphthylene	2.0 U
83-32-9	Acenaphthene	2.0 U
86-73-7	Fluorene	2.0 U
85-01-8	Phenanthrene	2.0 U
120-12-7	Anthracene	2.0 U
206-44-0	Fluoranthene	2.0 U
129-00-0	Pyrene	2.0 U
56-55-3	Benzo(a)Anthracene	2.0 U
218-01-9	Chrysene	2.0 U
205-99-2 207-08-9	Benzo(b)Fluoranthene & Benzo(k)Fluoranthene	3.0 U
50-32-8	Benzo(a)Pyrene	3.0 U
193-39-5	Indeno(1,2,3-cd)Pyrene	5.0 U
53-70-3	Dibenz(a,h)Anthracene	5.0 U
191-24-2	Benzo(ghi)Perylene	6.0 U

SURROGATE PERCENT RECOVERY	
Terphenyl	109%

Data Qualifiers

U	Indicates compound was analyzed for but not detected at the given detection limit.
NA	Indicates compound not analyzed.
NR	Indicates compound not reported due to dilution and/or matrix interference.

SPECTRA Laboratories, Inc.

5013 Pacific Hwy. E. #12 • Tacoma, WA 98424 • (206) 922-5120

October 17, 1989

Analytical Resources Inc.
333 Ninth Avenue North
Seattle, WA 98109-5187
Customer #81570

Sample ID: MW-4/5-1 3747-C
Desc: Oil
Spectra #27474
RUSH

Attn: Dave Mitchell

Cadmium	(Cd), ppm	<1
Chromium	(Cr), ppm	1
Lead	(Pb), ppm	5
Arsenic	(As), ppm	<1

SPECTRA LABORATORIES, INC.

Steven G. Hibbs, Chemist